THE IMMIGRATION OF LEPIDOPTERA TO THE BRITISH ISLES IN 1984

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In extreme contrast to 1983, 1984 was a poor year for immigrant Lepidoptera. Only half as many of the wholly immigrant species were reported; there were fewer probable or possible immigrants; and the numbers of adult individuals of most of them were very small. All the common species occurred, but their numbers were mostly below average. An outstanding feature, however, was provided by at least 100 larvae or pupae of *Acherontia atropos* L., which were noted from mid August to early October, although only half a dozen moths were reported which could have been their parents or their offspring. An unusual number of larvae and pupae but only few moths were also reported for *Agrius convolvuli* L.

Of the rarities the first confirmed specimen of *Agrotis crassa* Huebner in the British Isles (except for the Channel Islands) was caught at Fountainstown, co. Cork by Dr. A. A. Myers on August 20.

A single specimen of *Iphiclides podalirius* L. was closely examined and distinguished from *Papilio machaon* L. in a garden near Ross-on-Wye, Herefordshire on August 26 by Dr. P. Aldrich-Blake. He knew of no rearing of this species in captivity in the area, and it was probably part of the varied immigration around that date. Two examples of *Pontia dapidice* L. were also reported: a female watched on buddleia in a garden near the sea at Weston-super-Mare, North Somerset on July 7 and 8 by Mrs. K. Jones (per N. W. Lear), and a male flying and settling on the ground also in a garden at Fairoak, near Eastleigh, South Hampshire on July 16, by P. Holloway. F.R.E.S.

The season began encouragingly with many records of at least seven immigrant species between April 4 and the first week of May. Some of the first to be seen, including *Vanessa atalanta* L., *Colias crocea* Fourc., *M. stellatarum* L., may have survived the unusually mild winter either in their earlier stages or as imagines. Against this, however, there is a report by fishermen of the sighting of about ten *C. crocea* flying towards St. Catherines Head, Isle of Wight, early in the month, and there were undoubtedly large influxes from April 16 into early May which, besides these species, included many *Agrotis ipsilon* Hufn., which reached to Orkney on April 24, and examples of *Orthonama obstipata* F., *Autographa gamma* L., and a *Nomophila noctuella* surprisingly on the Isle of Canna, Inner Hebrides on May 4.

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The periods of warmth in April were succeeded by mostly northerly winds and low night temperatures, briefly broken from May 31 to June 3 but continued at least in south England with little further interruption through June into the first week of July. This made the season a very late one for resident species and also probably prevented successful breeding by the early immigrants. The influxes of *V. atalanta, A. gamma* and other common speices which are usual in May and June appear to have been small, and the only scarce immigrants reported were three *A. convolvuli* L. in mid June and a single *Daphnis nerii* L. found on the beach at Worthing, West Sussex on June 25.

On July 6 a shift of wind to south east and south began nine weeks of warmth and drought similar to those in 1983. A sizeable immigration brought many *V. atalanta, M. stellatarum*, smaller numbers of *C. crocea*, and almost the first arrivals of *C. cardui, Peridroma saucia* Huebner, *N. noctuella* and *U. ferrugalis* Huebner; but the scarcer species were represented only by single records of *P. daplidice, Diasemia ramburialis* Dup. and *Palpita unionalis* Huebner. Other influxes between July 18 and August 1 repeated most of the common species and added more *A. convolvuli*, the first few *Rhodometra sacraria* L., single specimens of *Nymphalis antiopa* L. and *H. peltigera*, the first few *Spodoptera exigua* Huebner, and *T. emortualis* and *Enargia paleacea* L. in Orlestone Forest, East Kent, on July 31. A single *T. atriplicis* was also caught in Guernsey on July 28.

In the first week of August north east winds brought first examples of *Eurois occulta* L. to Orkney and South Hampshire, with others a few days later widely spread in the east and south east counties, a *N. antiopa* at Gibraltar Point, North Lincolnshire on August 6, one at Southampton, South Hampshire on the same day and another at Alton, North Hampshire on August 8. The largest and most varied invasions of the year came from August 20 to 31, during a very warm spell in which the winds came at first from the south east, later due east across south Britain, then south west from the Atlantic, and finally east and north east across the North Sea. *A. crassa* was trapped in co. Cork, with *Discestra trifolii* Hufn., and on August 23 and 24 *Agrotis puta* Huebner and *Eilema griseola* Huebner, immigrants to Ireland, the latter two probably from mainland Britain. Then a small influx of *Mythimna albipuncta* D. & S. began on August 20, and a score of *R. sacraria* were reported from August 23 into the first week of September, and also a few *S. exigua*, scattered examples of *N. antiopa*, two *Scopula rubiginata* Hufn., and singles of *I. podalirius, P. daplidice, Danaus plexippus* L., *Mythimna vitellina* Huebner and *Mythimna loreyi* Dup. As the wind returned to the north east there were more *E. occulta* in Lincolnshire and Yorkshire and two *A. atropos* on the beach and at sea off

the coast. In all over 20 certainly or probably immigrant scarce species were seen during this period.

In September there appears to have been a considerable immigration of commoner species, including especially *V. atalanta, A. gamma*, and *U. ferrugalis*, about the middle of the month, and another, rather larger, in its last week which brought also a small wave of *A. convolvuli*, a few more *R. sacraria*, and two *D. ramburialis*. October was barren except for a few arrivals of *Mythimna unipuncta* Haw, *M. vitellina* and *U. ferrugalis* with a short spell of south west wind in the middle of the month. There was another wave of the same species in similar winds and unusual warmth from November 6 to 11; *V. atalanta* was also noted on the south coast in numbers at that time. *M. unipuncta* was reported in Sussex and South Hampshire as late as November 28, December 3 and 5, and last in South Essex on December 24.

Among the scarcer species which are listed in Annexe II, the records of *Acherontia atropos*, only nine moths but about 100 larvae or pupae, require some comment. The moths were very scattered both in date and place: in July four in Dorset and Sussex, three in August in Kent, Herefordshire and Yorkshire, and in September one at sea off the north Yorkshire coast, and the last near John O'Groats, Caithness on September 28. Except perhaps in Dorset these do not agree in their distribution with recorded larvae which might have been their off-spring, so that there must have been many other immigrants during the summer which were not observed. Of the larvae, and pupae half were found by repeated searches at Weston-sub-Mendip, North Somerset, and the others widely spread over seventeen English counties and vice counties, mostly in the south and east but reaching Warwickshire, Worcestershire and Herefordshire and with a single larva, the first reported at Lancaster on August 8. A few were found later in August, but the majority, many already full grown, were in September, with some continuation to the end of October. Pupae were found from September 16 onwards. Some of these produced moths in captivity, but the absence of late records and the fact that pupae are known to require temperatures of 70°F. or higher suggest that none did so in the wild. It is interesting that, although potato was the usual food plant, larvae were also found on the native woody nightshade and on jasmine, clematis and forsythia. In Ireland two moths were caught in co. Kerry about September 9 and also one larva. In Guernsey four full-fed larvae were found in mid September, and in Alderney one larva on September 20.

The records of *Agrius convolvuli*, with 29 moths, about 30 larvae and five pupae, are also hard to interpret. There were three records of moths in June, one in Glamorgan and two in East Sussex; in July, four in South Essex, singles in South Hampshire, Dorset, Surrey Warwickshire and two on July 27 and 28 in Norfolk;

in August one in North Lincolnshire and four in East and West Sussex; in September a second in the same place in Glamorgan and singles in Westmorland, East and West Sussex, North Hampshire; in October one at Lewes, East Sussex; and the last on November 10 at Petworth, West Sussex, which coincided with the "red dust" which is believed to have come from the Sahara. One mature larva was found at Marsh Chapel, North Lincolnshire on July 21, almost all the others in the second half of September, and pupae from September 26 to October 13. Most of the larvae were found in the Vale of Pickering, Yorkshire, and three larvae and four pupae with those of *A. atropos* in North Somerset. No moths were noted in either of these counties. Only at Rye, East Sussex, where a moth was seen in mid June and a mature larva on September 28, and at Ringmer, a moth on August 9 and a mature larva on September 30, is there any probable connection between recorded moths and larvae or pupae. Several of the larvae are said to have pupated successfully, and a pupa found at Little Comberton, Worcestershire on October 4, provided a moth in captivity on November 26th; but it is unlikely that any September or October larvae or pupae could have survived to do so in the wild.

The common butterflies were reported by very many observers. Of *Colias crocea* their records cover over 350 in Britain, 30 in Ireland, and a few in Guernsey: vastly less than the abundance of 1983, but rather above the numbers of other recent years. They began early. From April 13 to May there were a dozen sightings scattered along the south coast from St. Mary's, Scilly to the Isle of Wight, and it was said to be the commonest butterfly present at Easter (April 20/23) in one place between Sidmouth and Beer; examples were also seen in Surrey, North Somerset, and one as far north as Stafford on May 13. Despite claims that some were offspring of arrivals in 1983, it is more probable that all were part of the general arrival of immigrant species in April and early May, which has already been mentioned.

Thereafter two were seen on June 1 and 3; there appear to have been small invasions about mid July and at the end of the month. In August few were seen before the first considerable invasion which began about August 23. In September some were noted almost every day. The total of over 200 resulted mainly from a large influx in the middle and a smaller one at the end, but the scatter of dates suggests that local breeding, presumably from July immigrants, and probably most of 44 seen in October also had local origins. The last was seen near Plymouth on October 27.

Records of *C. crocea* came from 25 English and Welsh counties and vice counties, with a clear southern and western bias. The south coast accounted for two thirds of the records, from Cornwall to Sussex, with the most, as in 1983, from Dorset; but two were seen on Lundy Island in the Bristol Channel and 25 in North Somerset,

a few in Glamorgan, Carmarthen, Pembroke, Anglesey and Flint, and a dozen, all in September, in Westmorland and Cumberland. We know of no sightings in Scotland. Inland counties fared poorly: West Kent two in late August and September, Surrey (2 in May, Warwickshire (4), Worcestershire (4), Herefordshire (1), Staffordshire (1). In the east there were two at Spurn Point Bird Observatory on July 11 and September 30, and eight, all well inland, in Lincolnshire from September 2 to October 14.

Vanessa atalanta was widely said to be very scarce or scarcer than usual, but it became fairly numerous in some places from late July onwards; in all there were over 1000 dated records. The first was seen at Walton Bay, North Somerset, on March 1, and over 30 were seen in April and early May, including one in Westmorland/ Furness on April 22 and one in Orkney on May 7. Arrivals later in May and in June seem to have been few; but a large influx in the second week of July reached Cape Wrath in Sutherland, Easter Ross, and Caithness, as well as again Orkney, where it became fairly common locally in September. There were further invasions, though not very large ones, in the last weeks of July and August, in third and last weeks of September, and possibly even in early November. The records do not suggest that local breeding was important; but two dozen young larvae were found on pellitory-of-the-wall (*Parietaria judaica*) on St. Anthony's Head, Cornwall in late August, and 27 small larvae on August 18 as far north as Keiss, Caithness, where adults had been in July. Late butterflies were seen on November 24 at Sparsholt, North Hampshire and at Reading, Berkshire, and on November 25 near Plymouth, South Devon.

Cynthia cardui, with reports covering only just over 100, had its poorest year since at least 1967 and possibly much earlier. The first was seen at Knowle, North Somerset on April 20. There were four in the Bristol area and two near Plymouth between June 16 and 27, about 30 in each of the months July, August and September, and three in October, the last being at Portland on October 14. Most seem to have arrived simultaneously with immigrations of *V. atalanta*. No larvae have been reported, and few of the butterflies seem to have been locally bred. Distribution was nonetheless surprisingly wide. A total of 43 were assiduously placed and dated by 27 recorders in the Bristol area of North Somerset and South Gloucestershire. It was seen in many places along the south coast from the Lizard, Cornwall to Pegwell Bay, East Kent, with the highest total of 13 at Portland Bill B.O. On the west coast seven were recorded in Furness and Cumberland, with the most northern at St. Bees Head; and on the east it was seen occasionally in North Lincolnshire, and twice near Filey, South East Yorkshire on September 11 and 19. Single inland records came from Hampstead and Stanmore, Middlesex on August 16 and September 13; Reading, Berkshire September 5 and 6; Tiddesley Wood, Worcestershire,

August 20; and Hough Wood, Herefordshire in early July. In Guernsey four or five were reported, beginning in July.

Macroglossa stellatarum. This mainly diurnal species disperses quickly and widely, and is usually seen only singly except near the points of arrival of immigrant swarms. The total of over 200 reported indicates a fairly good season. Several seen in early April in the Isle of Wight, South Devon and East Sussex may have hibernated, but a concentration at the end of the month indicates a small immigration. There was another in late June, and there was a large influx in mid July, when 18 were seen at Sandwich, East Kent on July 18 and 19, and another at the end of the month. Larvae were found on Lady's Bedstraw (*Galium verum*) in the Isle of Man in late August, and wide scatter of dated records in August and September may have been due to local emergences of moths, in October, however, over 50 seen in the Isles of Scilly on October 7/10, and others at Portland, Dorset, were probably immigrants. The last moth was seen at Oysterhaven, Isle of Man on December 30. The spread of adults was wide. They were reported in 27 English and Welsh counties and vice counties, reaching northwards to Westmorland/Furness and Spurn Point in South East Yorkshire, and inland in small numbers or singly, in Surrey, Berkshire, Worcestershire, South Gloucestershire, Herefordshire, and North West Yorkshire. In Scotland they were seen in Ayrshire, the Isle of Arran and Orkney. In Guernsey there was a few from July to October, and in Ireland it was said to be very common in co. Cork and was seen in co. Dublin and co. Donegal.

(*To be continued*)

Notes and Observations

A SECOND GENERATION MENOPHRA ABRUPTARIA THUNB.: WAVED UMBER (LEP.: GEOMETRIDAE). — I was surprised to find a specimen of this normally univoltine species in my m.v. trap at Mitcham on August 31st 1983. This would seem to be an unusual record since Skinner (*Colour Ident. Guide Moths Br. Isles*) describes the species as univoltine and South (*Moths Br. Isles*, 1961) makes no mention of any records of second generation examples. I presume that this example resulted from the abnormally high temperatures during the summer of 1983.

I also noted second generation examples of *Euproctis similis* Fuessly and *Dypterygia scabriuscula* L. during the autumn of 1983. These records would seem to be less unusual than that of *M. abruptaria*. — R. K. A. MORRIS, 241 Commonside East, Mitcham, Surrey CR4 1HB.